

REMARKS/ARGUMENTS

Claims 27-30 and 33-46 were pending in the present application. The present response amends claims 27-30 and 43-44, and adds new claims 47-50, leaving pending in the application claims 27-30 and 33-50. Reconsideration of the rejected claims and consideration of the newly presented claims is respectfully requested.

I. Objection to New Matter

The amendment filed on January 24, 2005 is objected to for introducing new matter. Particularly, the language “a permutation thereof” with respect to the 1:3:9 and 4:3:9 ratios is objected to for introducing new matter into the disclosure. As discussed in said response, original claim 27 in the present application recited “the thicknesses of the plates are in some permutation of the ratios of 1:3:9,” and original claim 28 recited “the thicknesses of the plates are in some permutation of the ratios of 3:4:9.” As these limitations were in the application as filed, the reintroduction of these limitations cannot introduce new matter.

Further, these limitations are supported by the specification. For example, paragraph [0087] discusses choosing “the order of the depolarizer plate thicknesses,” stating that for “both the 1:3:9 and 4:3:9” ratios there are “several orderings” for which the lowest two frequencies vanish. Paragraph [0087] also gives the example where, for a 4:3:9 ratio, “the thickest plate is in the middle” and the “thinnest plate is furthest from the wafer,” which would give a 4:9:3 ratio, which is a permutation of the 4:3:9 ratio. The ratio 3:4:9 also was recited in the application as filed. Paragraph [0090] also states that the plates can be “stacked in various orders.” As the application as filed explicitly recited permutations in the claims, stated that the ratios could be stacked in various orders, and gave specific examples of such permutations (it is not necessary to list all permutations of each ratio), it is respectfully submitted that the language to which the Examiner objected is supported by the specification and the rejection based on alleged new matter should be withdrawn.

II. Rejection under 35 U.S.C. §112

Claims 27-30 and 33-46 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Particularly, the specification is rejected as failing to teach how three birefringent plates “with certain thickness or thickness ratios or certain angles

between polarization axes of the plates will make the three plates a depolarizer” (OA p. 3). The Office Action goes on to state that it is known that “depolarization is a result of the certain combination of the retardance frequency of the birefringent plates,” with the retardance being a function of “the thickness” and the “refractive indices in the ordinary and extraordinary directions of the birefringent plates,” where “the retardance ratio becomes the thickness ratio” when the plates are of the “same material.” The Office Action then states that simply the thickness of the plates or the “relative angle of axes” will not make the plates a “depolarizer” (OA p. 3).

Applicants respectfully submit that paragraphs [0074]-[0088] describe how the three plates having substantially similar birefringent properties can be used to create a depolarizer, and how this is different from a (known) Lyot depolarizer with two plates, as well as how the “alignment angles” between the plates can be used to eliminate dependence upon the wafer’s rotation angle and polarization properties, and how the thickness of the plates can be used to control the fundamental frequency. This should be sufficient to enable one of ordinary skill in the art to make or use the invention(s) recited in these claims. It also is stated in the specification in paragraphs [0021]-[0022] that in a preferred embodiment the three depolarizer plates are composed of the same material, the material being selected, at least in part, based on its birefringent properties (which include the indices of refraction associated with different crystallographic directions, as known to one of ordinary skill in the art). Paragraph [0080] also discusses how the equations assume that the plates have the same ordinary and extraordinary refractive indices n_o and n_e (hence substantially similar birefringent properties).

It therefore is respectfully submitted that when reading the claims along with the specification, one of ordinary skill in the art could make or use the inventions recited therein. As such, it is respectfully submitted that the claims are enabled by the specification. Applicants therefore respectfully request that the rejection with respect to the claims be withdrawn.

III. Objection to the Claims

Claims 29, 39, and 41 are objected to due to informalities. Specifically, the recitation of “polarization angle” is objected to in the Office Action. Applicants appreciate the Examiner’s helpful suggestion and have amended claim 29 appropriately. Applicants therefore respectfully request that the objection be withdrawn.

IV. Rejection under 35 U.S.C. §103

Claims 27-28 and 33-46 are rejected under 35 U.S.C. §103(a) as being obvious over *Hakimi* (US 5,432,637). With regard to claims 27-28, it is set forth in the Office Action on page 4 that *Hakimi* discloses “three birefringent plates nearly satisfying the 1:3:9 thickness ratio.” The Office Action recognizes that *Hakimi* does not include “explicit teachings of the respectively recited thickness ratios or a permutation thereof” (OA p. 4). *Hakimi* does not even mention, suggest, or reference the thickness ratios, or the importance thereof. The Office Action states on p. 4 that *Hakimi* discloses “three birefringent plates nearly satisfying the 1:3:9 thickness ratio.” Applicants respectfully request that such disclosure be identified in order to maintain the rejection, as Applicants can find no such disclosure. It is respectfully submitted that there is no indication that the generic diagram is to scale, and without proof of scale a generic diagram certainly cannot be relied upon for dimensional measurements. Further, a rudimentary ruler measurement of Figure 1 would show that the plates are not near to being in a 1:3:9 ratio. Further still, with only a single diagram and no discussion of thickness ratios, it is unclear as to how *Hakimi* could possibly disclose both a 1:3:9 and 4:3:9 ratio. *Hakimi* also does not teach or suggest adjusting the thicknesses to optimize the retardance frequency. Since *Hakimi* does not suggest the recited ratios, nor provide any motivation to adjust the thickness ratio in order to optimize the retardance frequency, it is respectfully submitted that *Hakimi* cannot render obvious claims 27 and 28, or dependent claims 33-42.

With regard to claims 43-46, *Hakimi* does not teach or suggest specific thickness ratios, as discussed above, and only mentions a total length of 40mm to destroy phase coherence. As discussed above, *Hakimi* also fails to teach or suggest adjusting the thickness ratios to optimize the retardance frequency. It is respectfully submitted that it would not have been obvious, or a matter of routine experimentation in light of the teachings of *Hakimi*, utilize a depolarizer with three birefringent plates having respective thicknesses of 1.5mm, 1.125mm, and 3.375mm, or total thicknesses of approximately 6mm. Claims 43-46 therefore cannot be rendered obvious by *Hakimi*.

V. Amendment to the Claims

Unless otherwise specified, amendments to the claims are made for purposes of clarity, and are not intended to alter the scope of the claims or limit any equivalents thereof. Claims 27-30 and 43-44 also have been amended to recite that the birefringent plates have substantially similar birefringent properties. The amendments are supported by the specification and do not add new matter to the specification.

VI. Newly Presented Claims

Claims 48-50 have been added to cover different aspects of the present invention. These claims are supported by the specification and do not add new matter. These claims include limitations that are not disclosed, taught, or suggested by *Hakimi*, for reasons including those discussed above. Applicants therefore respectfully request consideration of newly presented claims 48-50.

VII. Conclusion

In view of the above, it is respectfully submitted that the application is now in condition for allowance. Reconsideration of the pending claims and a notice of allowance is respectfully requested.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-1703, under Order No. TTI-30900. **A duplicate copy of the transmittal cover sheet attached to this Response to Office Action Mailed May 3, 2005, is provided herewith.**

Respectfully submitted,

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Dated: July 29, 2005

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